

## APPLICANT'S REMARKS

The 03/23/06 Office Action indicates that particular pending claims are rejected under 35 USC § 102, and that particular pending claims are rejected under 35 USC § 103. Each of these rejections are considered below.

### Claim Rejections under 35 USC 102

The 03/23/06 Office Action indicates that claims 1-15 stand rejected under 35 USC § 102 (b), as being anticipated by Sun et al. (US 5,677,594) stating:

"Regarding claims 1, 8-11, 13, and 15, sun discloses the use of light emitting device including a white emitting mixture of  $\text{CaS}_y\text{Se}_{1-y}:\text{Ce}$  where  $0 \leq y \leq 1$ . (Column 4, lines 55-70). The activator would be doped in concentrations of between .0001% and 10% mol percent respectively.

Regarding claims 2, 3, and 7, the phosphor  $\text{CaS}:\text{Ce}$  is anticipated by the range disclosed by Sun.

Regarding claims 5 and 6, the phosphor  $\text{CaSe}:\text{Ce}$  is anticipated by the range disclosed by Sun.

Regarding claims 4, the phosphor  $\text{CaS}_{0.5}\text{Se}_{0.5}:\text{Ce}$  is anticipated by the range disclosed by Sun.

Regarding claim 12, Sun further discloses the use of multiple phosphors with difference activators in order to generate white light. (Column 2, line 4-16).

Regarding claim 14, sun further discloses the use of multiple activators, for example  $\text{SrS}:\text{Ce}, \text{F}$ . (See figure 2)."

Applicants understand that according to MPEP 8<sup>th</sup> ed. ; §706.02 pp 700-21, col. 1, under the heading: DISTINCTION BETWEEN 35 U.S.C 102 AND 103 , that for anticipation under 35 USC § 102 to be proper, *"the reference must teach every aspect of the claimed invention"*.

As regards the Sun et al. reference, Applicants note that the Sun et al. reference contains the specific descriptive limitation that the subscripts in the formula:  $\text{CaS}_y\text{Se}_{1-y}$  (which are y, and y-1) must add up to unity (1), by definition. Applicants have herein amended the independent claims (1 and 17) in the instant application to forfeit the subject matter where  $x + y = 1$  in

Applicant's claims, to avoid reading on the Sun et al reference. Therefore, in view of these amendments, the Sun et al. reference no longer anticipates Applicants' claimed subject matter, since not all features of Applicants' claimed invention are contained in this single prior art reference, and we respectfully submit that the rejection of claims 1-15 under 35 USC § 102 (b) based on the Sun et al. reference (US 5,677,594) should be reconsidered, and withdrawn.

The 03/23/06 Office Action indicates that claims 1-3, 7-9, 12-22, and 25-28 are rejected under 35 USC § 102 (b), as being anticipated by Juestel et al. (US 2002/0105266) stating:

"Regarding claims 1-3, 7-9, 12-22, and 25-28, Juestel discloses the use of light emitting diode including a white emitting phosphor mixture of (Ca,Sr)S:Eu and CaS:Ce, Eu. (Paragraphs 0028 and 0031). The activator would be doped in concentrations of between .0001% and 10% mol percent respectively."

Applicants note that the Juestel et al. reference does not disclose any phosphors of the type  $MS_xSe_y:B$ , but only those which contain *either* sulfur or selenium. Previously, the distinctions of Applicants' claims when either x or y in Applicants' claims were zero may have possibly been unclear. Claims 1, 2, 3, 4, 5, and 17 have been herein amended to exclude the possibility of either x or y being zero. No new matter is entered, because the original language in claims 1 and 17 was : "... x and y are each independently any value between about 0 and about 1...". Moreover, by our amendments, we have also corrected perceived improprieties in claims 2-5 for possibly being in improper form for not further limiting the subject matter of the claim from which they depended, and have hopefully eliminated confusion concerning the claimed values of x and y. (We have used the double-brackets method for deletion, because a strikethrough could not be easily perceived). The new language of claims 1 and 17 is believed to be clear in precluding x and y from each being either 0 or 1.

For clarity, the amendments to claims 2, 3, 4, 5 comprised the following net changes:

In claim 2, the first "less than or equal" sign in the specified ranges for each of x and y was replaced by a "less than" sign.

In claim 3, the first "less than or equal" sign in the range for y was replaced with a "less than" sign.

In claim 4, the first "less than or equal" sign in the specified ranges for each of x and y was replaced by a "less than" sign.

In claim 5, the first "less than or equal" sign in the range for x was replaced with a "less than" sign.

Therefore, since the Juestel et al. reference no longer teaches every aspect of Applicants' claimed invention, we respectfully submit that the rejection of claims 1-3, 7-9, 12-22, and 25-28 under 35 USC § 102(b) based on the Juestel et al. reference (US 2002/0105266) should be reconsidered, and withdrawn.

### **Claim Rejections under 35 USC 103**

The 03/23/06 Office Action indicates that claims 23 and 24 stand rejected under 35 USC § 103(a) as being unpatentable over Juestel et al. (US 2002/0105266) in view of Sun, et al.. (US 5,677,594) stating:

"Regarding claims 23 and 24, Juestel discloses the device as claimed (see rejection of claim 17 above) but does not appear to specify the use of the specific phosphors claimed. However, sun, in the same field of endeavor, discloses the use of the phosphor,  $\text{CaS}_y\text{Se}_{1-y}\text{:Ce}$ , where  $0 \leq y \leq 1$  in light emitting devices. The  $\text{CaS}_y\text{Se}_{1-y}\text{:Ce}$  where  $0 \leq y \leq 1$  phosphor provides a much greater range of options for the host matrix and likewise more performance options. Customization of the selected phosphors enables higher brightness and environmental resistances. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the more diverse phosphor ranges taught by Sun into the device as disclosed by Jeustel in order to advantageously enable higher brightness and environmental resistances."

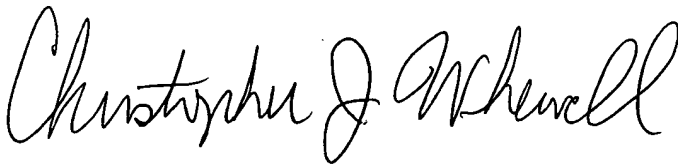
Applicants respectfully submit that claims 23 and 24 have been cancelled by the amendments herein, and that this rejection is therefore no longer applicable to the instant Application.

Claim 28 as originally filed contained an extraneous letter "c" in the first line, which has been removed by amendment herein.

Applicants are grateful for all consideration received, and respectfully submit that all of claims 1-5, 8-9, 12-22, and 25-28 should now be in condition for allowance.

Thank you for your consideration.

Respectfully submitted,

A handwritten signature in black ink, reading "Christopher J. Whewell". The signature is written in a cursive, flowing style.

Christopher J. Whewell, Reg. 37,469  
WESTERN PATENT GROUP  
6020 Tonkowa Trail  
Georgetown, Texas 78628  
(512) 763-1142